

2.3 DEDUCTIVE REASONING

DEDUCTIVE REASONING: uses facts, definitions, accepted properties, and the laws of logic to form a logical argument.

Homework

EX: The man is wearing goggles.

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LAWS OF LOGIC

#1, 2, 20a, 21

LAW OF DETACHMENT

(11a, 12a)
only

If the hypothesis of a true conditional statement is true, then the conclusion is also true.

LAW OF SYLLOGISM

If hypothesis p, then conclusion q. \nwarrow If these two statements
If hypothesis q, then conclusion r. \swarrow are true

If hypothesis p, then conclusion r. \leftarrow then this statement is true.

USE THE LAW OF DETACHMENT to make a valid conclusion

EX 1 If two segments have the same length, then they are congruent. You know that $BC = XY$.

Conclusion: $BC \cong XY$

If possible, use the Law of syllogism to write a new conditional statement.

EX 2 IF Rick takes Chemistry this year, then Jesse will be Rick's lab partner.

If Jesse is Rick's lab partner, then Rick will get an A in chemistry.

NEW STATEMENT

If Rick takes chemistry this year, then Rick will get an A in chemistry.

EX 3 If a polygon is regular, then all angles in the interior of the polygon are congruent.

If a polygon is regular, then all of its sides are congruent.

Neither conclusion is same as hypothesis. So can't write new statement.